

## ABSTRACT OF THE DISCLOSURE

Estrogen-nucleoside, estrogen-guanine and estrogen-mercapturate adducts are potential biomarkers for determining susceptibility of animals to a number of estrogen related cancers. These adducts may be used as biomarkers for determining risk of estrogen-induced cancers. A linker chemistry has been devised to couple these adducts to protein for production of immunogens, required for production of specific monoclonal antibodies.